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Total Number of Pages in This Submission

12

| | |
|----------------------|-------------------------|
| Application Number | 10/553,489 |
| Filing Date | October 17, 2005 |
| First Named Inventor | Yusaku SHIMAOKA, et al. |
| Art Unit | 2875 |
| Examiner Name | To Be Assigned |
| Attorney Docket No. | MTS-3532US |

ENCLOSURES (Check all that apply)

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|--|---|---|
| <input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/Declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Response to Missing Parts/ Incomplete Application <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53 | <input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation, Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD | <input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): <ul style="list-style-type: none"> ➤ Return postcard ➤ Request for Corrected Filing Receipt ➤ Copy of Preliminary Amendment filed 10/17/2005 ➤ Marked-up copy of Filing Receipt |
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Remarks:

SIGNATURE OF APPLICANT, ATTORNEY OR AGENT

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|--------------|------------------|----------|--------|
| Firm Name | RatnerPrestia | | |
| Signature | | | |
| Printed Name | Daniel N. Calder | | |
| Date | June 21, 2006 | Reg. No. | 27,424 |

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| Signature | |
| Typed or Printed Name | Fran Petrillo |

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Office, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, ALEXANDRIA, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Yusaku SHIMAOKA, et al.

Serial No.: 10/553,489
Filed: October 17, 2005
For: LIGHT SOURCE APPARATUS,
LIGHTING APPARATUS AND
PROJECTION DISPLAY
APPARATUS (AS AMENDED)

Group No.: 2875
Examiner: To Be Assigned

Filing Receipt Corrections
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Commissioner for Patents
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Error in

1. Applicant's name
2. Applicants' address
3. Title
4. Filing Date
5. Serial Number
6. Foreign/PCT Application Reference
7. Other:

Correct data

- 1.
- 2.
3. LIGHT SOURCE APPARATUS, LIGHTING APPARATUS AND PROJECTION DISPLAY APPARATUS (copy of Preliminary Amendment filed October 17, 2005)
- 4.
- 5.
- 6.
- 7.

3. No fee is due.

Respectfully submitted,

RatnerPrestia
P. O. Box 980
Valley Forge, PA 19482-0980
(610) 407-0700

Daniel N. Calder

Daniel N. Calder, Reg. 27,424

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Date: June 21, 2006

Fran Petrillo

Fran Petrillo



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|------------|---------------------------|----------|---------------|----------------|----------|----------|----------|
| 10/553,489 | 10/17/2005 | 2875 | 1860 | MTS-3532US | 19 | 18 | 2 |

RATNERPRESTIA

CONFIRMATION NO. 1296

52473
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JUN 19 2006

FILING RECEIPT



OC000000019165287

Date Mailed: 06/12/2006

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Applicant(s)

Yusaku Shimaoka, Osaka, JAPAN;
 Shu Namba, Osaka, JAPAN;
 Kazunori Tanabe, Okayama, JAPAN;

Power of Attorney: The patent practitioners associated with Customer Number **52473**.

Domestic Priority data as claimed by applicant

This application is a 371 of PCT/JP04/05422 04/15/2004

Foreign Applications

JAPAN 2003-114162 04/18/2003

If Required, Foreign Filing License Granted: 06/07/2006

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US10/553,489**

Projected Publication Date: 09/14/2006

Non-Publication Request: No

Early Publication Request: No

Title

COPY

Light Source Apparatus, Lighting Apparatus and Projection Display Apparatus
 Light source unit, illuminator and projection display

Preliminary Class

362

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Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

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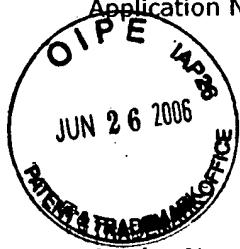
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Application No.: To Be Assigned

MTS-3532US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appln. No: To Be Assigned
Applicants: Yusaku SHIMAOKA, et al.
Filed: Herewith
Title: LIGHT SOURCE APPARATUS, LIGHTING APPARATUS AND
PROJECTION DISPLAY APPARATUS (AS AMENDED)
TC/A.U.: To Be Assigned
Examiner: To Be Assigned
Confirmation No.: To Be Assigned
Docket No.: MTS-3532US

PRELIMINARY AMENDMENT

Mail Stop PCT
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Prior to examination, please amend the above-identified application as follows:

- Amendments to the Title** begin on page **2** of this paper.
- Amendments to the Specification** begin on page **3** of this paper.
- Amendments to the Claims** are reflected in the listing of claims which begins on page _____ of this paper.
- Amendments to the Drawings** begin on page _____ of this paper and include an attached replacement sheet(s).
- Amendments to the Abstract** are on page **5** of this paper. A clean version of the Abstract is on page **7** of this paper.
- Remarks/Arguments** begin on page _____ of this paper.
- Please enter the enclosed Article 34 Amendment.**

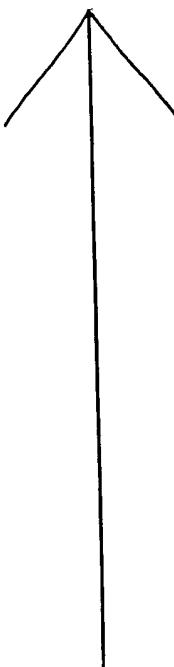


COPY

Amendment to the Title:

Please replace the Title with the following:

LIGHT SOURCE APPARATUS, LIGHTING APPARATUS AND PROJECTION DISPLAY
APPARATUS



COPY

Amendments to the Specification:

After the title and before the first paragraph, please insert the following paragraph:

THIS APPLICATION IS A U.S. NATIONAL PHASE APPLICATION OF PCT INTERNATIONAL APPLICATION PCT/JP2004/005422.

Please replace the paragraph, beginning at page 5, line 8, with the following rewritten paragraph:

As shown in Figure 11, the conventional multi-lamp optical system has the configuration in which the light radiated from multiple light source apparatuses gets incident on the rod integrator 2 which is homogeneous lighting means. However, a transmissive/reflective liquid crystal of displaying the image and the light modulation device called a DMD (Digital Micro-mirror Device) have a luminous flux incident angle range capable of substantially modulating the light and an image display effective area capable of displaying the image. For this reason, due to the relation of ~~Hertz~~~~Helmholtz~~ - Lagrange which is a basic formula of imaging optics, an output angle range of the light according to the size of an outgoing side opening 2b of the rod integrator 2 in an imaging relation with the relay lens 3 is uniquely decided by the relay lens 3.

Please replace the paragraph, beginning at page 5, line 24, with the following rewritten paragraph:

In this case, if the outgoing side opening and the incident side opening of the rod integrator 2 are of an equal size, the output angle range is equal to the incident angle range. If the outgoing side opening and the incident side opening are of different sizes, the incident angle range is in accordance with the size of the incident side opening induced by the relation of ~~Hertz~~~~Helmholtz~~ - Lagrange, and so only the luminous flux within this angle range is projected onto the screen via the rod integrator 2, relay lens 3, light modulation device 4 and projection lens.

Please replace the paragraph, beginning at page 7, line 6, with the following rewritten paragraph:

COPY

The light source apparatus of the second conventional example shown in Figure 15 is in a form of non-rotation asymmetry to the optical axis of the first concave mirror, that is, the straight line connecting the luminescence center 10c of the light-emitting portion 10 of the lamp to the focus Y. Its outer shape can be smaller than that of the first conventional example. The luminous fluxes formed by collection of light can also be of non-rotation asymmetry, and it is possible, even in the multi-lamp optical system of Figure 11, to reduce the distance between the first concave mirror 8 corresponding to the first concave mirror 6 and the incident side opening 2a of the rod integrator 2.

Please replace the paragraph, beginning at page 46, line 9, with the following rewritten paragraph:

As previously described, in the above embodiments, the lamp 11 is an example of the lamp or light generating means of the present invention, the spherical vessel portion of the lamp light-emitting portion 111 except the source of luminescence is an example of the spherical vessel portion of the present invention, the ends ~~111b-111c~~ and 111d are an example of the pair of ends of the present invention, the light transmission plane 111a of the lamp light-emitting portion 111 is an example of a first opposed plane of the present invention, and the light transmission plane 111b is an example of a second opposed plane of the present invention.

Please delete the following title, beginning at page 47, line 11:

Industrial Applicability

COPY

Amendment to the Abstract:

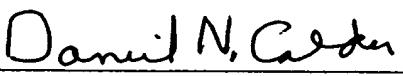
The Abstract has been amended. A revised Abstract is attached.

ABSTRACT

~~To provide a light source apparatus capable of striking a balance between miniaturization and high optical usable efficiency for concave mirrors as light generating means and light collecting means and further capable of emitting luminous fluxes in asymmetry to the light generating means and optical axes of the concave mirrors with high efficiency.~~

~~The A light source apparatus consisting of includes a lamp 11, an ellipsoidal mirror 12 of collecting a part of light radiated from a light transmission plane 111b of the lamp 11, and a spherical mirror 13 of collecting another part of the light radiated from a light transmission plane 111a not collected by the ellipsoidal mirror 12 and reflecting it on the ellipsoidal mirror 12, in which a reflection plane of the ellipsoidal mirror 12 and the reflection plane of the spherical mirror 13 are in a form of non-rotation symmetry to an optical axis 14 connecting a focal position F1 corresponding to a source of luminescence of the lamp 11 to a focal position F2 of the light collected by the ellipsoidal mirror 12 respectively, a. The distance between the reflection plane of the spherical mirror 13 and the source of luminescence of the lamp 11 is shorter than the distance between the source of luminescence and the focus of the light collected by the ellipsoidal mirror 12, and a part of the reflection plane of the ellipsoidal mirror 12 is formed around the optical axis 14.~~

Respectfully submitted,



Daniel N. Calder, Reg. No. 27,424
Attorney for Applicants

DNC/fp

Attachment: Abstract

Dated: October 17, 2005

COPY

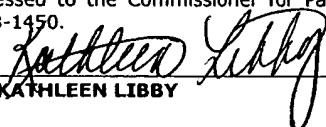
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Valley Forge, PA 19482-0980
(610) 407-0700

The Commissioner for Patents is hereby authorized to charge payment to Deposit Account No. **18-0350** of any fees associated with this communication.

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Date of Deposit: October 17, 2005

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KATHLEEN LIBBY

COPY

ABSTRACT

A light source apparatus includes a lamp, an ellipsoidal mirror collecting a part of light radiated from a light transmission plane of the lamp, and a spherical mirror collecting another part of the light radiated from a light transmission plane not collected by the ellipsoidal mirror and reflecting it on the ellipsoidal mirror, in which a reflection plane of the ellipsoidal mirror and the reflection plane of the spherical mirror are in a form of non-rotation symmetry to an optical axis connecting a focal position F1 corresponding to a source of luminescence of the lamp to a focal position F2 of the light collected by the ellipsoidal mirror respectively. The distance between the reflection plane of the spherical mirror and the source of luminescence of the lamp is shorter than the distance between the source of luminescence and the focus of the light collected by the ellipsoidal mirror, and a part of the reflection plane of the ellipsoidal mirror is formed around the optical axis.

COPY